ORDER NO. SD8103-1841

Service Manual

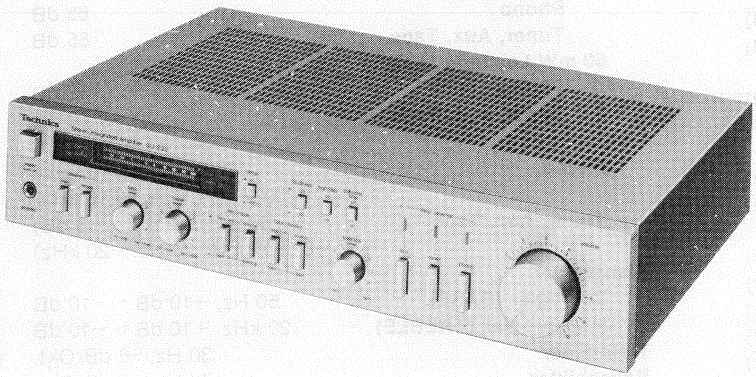
Stereo Integrated Amplifier

SU-Z22

〔E〕,〔EG〕,〔EK〕,〔EF〕,
〔EH〕,〔EB〕,〔XA〕,〔XL〕

SU-Z22(K)

〔E〕,〔EG〕,〔EH〕



***The cabinet and front panel are available in black color and silver types.**
*** The black type model is provided with (K) in the Service Manual.**

Areas

* [E] is available in Switzerland and Scandinavia.
* [EG] is available in F.R. Germany.
* [EK] is available in United Kingdom.
* [EF] is available in France.
* [EH] is available in Holland.
* [EB] is available in Belgium.
* [XA] is available in East South Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.

English

Specifications (DIN 45 500)

(Specifications are subject to change without notice for further improvement.)

■ AMPLIFIER SECTION

20 Hz~20 kHz continuous power output	
both channels driven	2 × 35W (4Ω)
	2 × 35W (8Ω)
40 Hz~16 kHz continuous power output	
both channels driven	2 × 35W (4Ω)
	2 × 35W (8Ω)
1 kHz continuous power output	
both channels driven	2 × 40W (4Ω)
	2 × 40W (8Ω)
Total harmonic distortion	
rated power at 20 Hz~20 kHz	0.05% (4Ω)
	0.03% (8Ω)
rated power at 40 Hz~16 kHz	0.05% (4Ω)
	0.03% (8Ω)
rated power at 1 kHz	0.05% (4Ω)
	0.03% (8Ω)
half power at 20 Hz~20 kHz	0.03% (8Ω)
half power at 1 kHz	0.005% (8Ω)
−26 dB power at 1 kHz	0.15% (4Ω)
50 mW power at 1 kHz	0.15% (4Ω)
Intermodulation distortion	
rated power at 250 Hz: 8 kHz=4:1, 4Ω	0.05%
rated power at 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0.03%
Power bandwidth	
both channels driven, −3 dB	10 Hz~25 kHz (4Ω)
(THD 0.05%)	10 Hz~30 kHz (8Ω)
Residual hum and noise	0.6 mV
Damping factor	20 (4Ω), 40 (8Ω)
Input sensitivity and impedance	
PHONO	2.5 mV/47kΩ
TUNER, AUX	150 mV/22kΩ
TAPE 2	150 mV/22kΩ
TAPE 1 REC/PLAY	180 mV/27kΩ
PHONO maximum input voltage (1 kHz, RMS)	150 mV
S/N	
rated power (4Ω)	
PHONO	72 dB (IHF, A: 80 dB)
TUNER, AUX, TAPE	86 dB (IHF, A: 97 dB)
−26 dB power (4Ω)	
PHONO	65 dB
TUNER, AUX, TAPE	65 dB
50 mW power (4Ω)	
PHONO	62 dB
TUNER, AUX, TAPE	62 dB
Frequency response	
PHONO	RIAA standard curve
	±0.8 dB (30 Hz~15 kHz)
TUNER, AUX, TAPE	5 Hz~100 kHz (−3 dB)
	+0, −0.3 dB (20 Hz~20 kHz)
Tone controls	
BASS	50 Hz, +10 dB~ −10 dB
TREBLE	20 kHz, +10 dB~ −10 dB
Subsonic filter	30 Hz, -6 dB/oct.
High-cut filter	7 kHz, -6 dB/oct.
Loudness control (volume at −30 dB)	50 Hz, +9 dB
REC OUT	150 mV
TAPE 1 REC/PLAY	30 mV/82kΩ
Channel balance, AUX 250 Hz~6,300 Hz	±1.0 dB
Channel separation, AUX 1 kHz	50 dB
Headphones output level and impedance	390 mV/330Ω
Load impedance	
MAIN or REMOTE	4Ω~16Ω
MAIN and REMOTE	8Ω~16Ω

■ GENERAL

Power consumption	310W
Power supply	AC 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (W×H×D)	430 × 86 × 288 mm
	(16-15/16" × 3-3/8" × 11-11/32")
Weight	5.7 kg
	(12.6 lb.)

Note:
Total harmonic distortion is measured by the digital spectrum analyzer (H.P. 3045 system).

Technics

Matsushita Electric Trading Co., Ltd.
P.O. Box 288, Central Osaka Japan

Deutsch

TECHNISCHE DATEN (Spezifikationen Können infolge von Verbesserungen ohne Ankündigung geändert werden.)

(DIN 45 500)

■ VERSTÄRKERTEIL

Dauerton-Ausgangsleistung bei 20 Hz ~ 20 kHz	
beide Kanäle ausgesteuert	2 × 35W (4 Ω)
	2 × 35W (8 Ω)
Dauerton-Ausgangsleistung bei 40 Hz ~ 16 kHz	
beide Kanäle ausgesteuert	2 × 35W (4 Ω)
	2 × 35W (8 Ω)
Dauerton-Ausgangsleistung bei 1 kHz	
beide Kanäle ausgesteuert	2 × 40W (4 Ω)
	2 × 40W (8 Ω)
Gesamtklirrfaktor	
Nennleistung bei 20 Hz ~ 20 kHz	0,05% (4 Ω)
	0,03% (8 Ω)
Nennleistung bei 40 Hz ~ 16 kHz	0,05% (4 Ω)
	0,03% (8 Ω)
Nennleistung bei 1 kHz	0,05% (4 Ω)
	0,03% (8 Ω)
halbe Nennleistung bei 20 Hz ~ 20 kHz	0,03% (8 Ω)
halbe Nennleistung bei 1 kHz	0,005% (8 Ω)
−26 dB Leistung bei 1 kHz	0,15% (4 Ω)
50 mW Leistung bei 1 kHz	0,15% (4 Ω)
Intermodulationsfaktor	
Nennleistung bei 250 Hz: 8 kHz = 4:1, 4 Ω	0,05%
Nennleistung bei 60 Hz: 7 kHz = 4:1, nach SMPTE, 8 Ω	0,03%
Leistungsbandbreite	
beide Kanäle ausgesteuert bei −3 dB	10 Hz ~ 25 kHz (4 Ω)
(THD 0,05%)	10 Hz ~ 30 kHz (8 Ω)
Restbrumm und Geräusch	0,6 mV
Dämpfungsfaktor	20 (4 Ω), 40 (8 Ω)
Eingangsempfindlichkeit und -impedanz	
Phono	2,5 mV/47 kΩ
Tuner, Aux	150 mV/22 kΩ
Tape 2	150 mV/22 kΩ
Tape 1 Aufnahme/Wiedergabe (TAPE 1 REC/PLAY)	180 mV/27 kΩ
Maximale TA-Eingangsspannung (1 kHz, eff.)	150 mV
Geräuschabstand	
Nennleistung (4 Ω)	
Phono	72 dB (nach IHF, A: 80 dB)
Tuner, Aux, Tape	86 dB (nach IHF, A: 97 dB)
−26 dB Leistung (4 Ω)	
Phono	65 dB
Tuner, Aux, Tape	65 dB
50 mW Leistung (4 Ω)	
Phono	62 dB
Tuner, Aux, Tape	62 dB
Frequenzgang	
Phono	RIAA-Standardkurve
	±0,8 dB (30 Hz ~ 15 kHz)
Tuner, Aux, Tape	5 Hz ~ 100 kHz(−3 dB)
	+0, −0,3 dB (20 Hz ~ 20 kHz)
Klangregler	
Baßregler (BASS)	50 Hz, +10 dB ~ −10 dB
Höhenregler (TREBLE)	20 kHz, +10 dB ~ −10 dB
Tiefenfilter	30 Hz, −6 dB/Okt.
Rauschfilter	7 kHz, −6 dB/Okt.
Gehörrichtige Lautstärkekorrektur (Loudness)	
(bei −30 dB Ausgangsleistung)	50 Hz, +9 dB
Aufnahmeausgang (REC OUT)	150 mV
Tape 1 Aufnahme/Wiedergabe (TAPE 1 REC/PLAY)	30 mV/82 kΩ
Kanalabweichung (Aux, 250 Hz ~ 6300 Hz)	±1,0 dB
Übersprechdämpfung (Aux, 1 kHz)	50 dB
Kopfhörerpegel und -impedanz	390 mV/330 Ω
Lautsprecherimpedanz	
MAIN oder REMOTE	4 Ω ~ 16 Ω
MAIN und REMOTE	8 Ω ~ 16 Ω

■ ALLGEMEINE DATEN

Leistungsaufnahme	310 W
Netzspannung	Wechselstrom 50 Hz/60 Hz, 110V/120V/220V/240V
Abmessungen (B×H×T)	430 × 86 × 288 mm
Gewicht	5,7 kg

Bemerkung:
Der Gesamtklirrfaktor wurde mit einem digitalen Rauschspektrometer (Anlage H.P. 3045) gemessen.

Français

CARACTERSTIQUES (Sujet á changement sans préaris.)

(DIN 45 500)

■ SECTION AMPLIFICATEUR

Puissance de sortie continue de 20 Hz~20 kHz,	
les deux canaux en circuit	2 × 35W (4Ω)
	2 × 35W (8Ω)
Puissance de sortie continue de 40 Hz~16 kHz,	
les deux canaux en circuit	2 × 35W (4Ω)
	2 × 35W (8Ω)
Puissance de sortie continue à 1 kHz	
les deux canaux en circuit	2 × 40W (4Ω)
	2 × 40W (8Ω)
Distorsion harmonique totale	
à puissance nominale (20 Hz~20 kHz)	0,05% (4Ω)
	0,03% (8Ω)
à puissance nominale (40 Hz~16 kHz)	0,05% (4Ω)
	0,03% (8Ω)
à puissance nominale (1 kHz)	0,05% (4Ω)
	0,03% (8Ω)
à demi-puissance (20 Hz~20 kHz)	0,03% (8Ω)
à demi-puissance (1 kHz)	0,005% (8Ω)
puissance de −26 dB à 1 kHz	0,15% (4Ω)
puissance de 50 mW à 1 kHz	0,15% (4Ω)
Distorsion d'intermodulation	
à puissance nominale à 250 Hz: 8 kHz=4:1, 4Ω	0,05%
à puissance nominale à 60 Hz: 7 kHz=4:1, SMPTE, 8Ω	0,03%
Réponse de fréquences	
les deux canaux en circuit, −3 dB	10 Hz~25 kHz (4Ω)
(THD 0,05%)	10 Hz~30 kHz (8Ω)
Bruit et ronflement résiduels	0,6 mV
Coefficient d'amortissement	20 (4Ω), 40 (8Ω)
Sensibilité et impédance d'entrée	
PHONO	2,5 mV/47kΩ
SYNTONISATEUR, AUX (TUNER, AUX)	150 mV/22kΩ
BANDE 2 (TAPE 2)	150 mV/22kΩ
BANDE 1, ENREGISTREMENT/LECTURE (TAPE 1 REC/PLAY)	180 mV/27kΩ
PHONO (tension d'entrée maximum, 1 kHz RMS)	150 mV
Signal/Bruit	
à puissance nominale (4Ω)	
PHONO	72 dB (IHF, A: 80 dB)
SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)	86 dB (IHF, A: 97 dB)

puissance de −26 dB (4Ω)	
PHONO	65 dB
SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)	65 dB
puissance de 50 mW (4Ω)	
PHONO	62 dB
SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)	62 dB
Réponse de fréquence	
PHONO	Courbe nominale RIAA ±0,8 dB (30 Hz~15 kHz)
SYNTONISATEUR, AUX, BANDE (TUNER, AUX, TAPE)	5 Hz~100 kHz (−3 dB) +0, −0,3 dB (20 Hz~20 kHz)
Réglage de la tonalité	
BASSES (BASS)	50 Hz, +10 dB~ −10 dB
AIGUS (TREBLE)	20 kHz, +10 dB~ −10 dB
Filtre subsonique	30 Hz, −6 dB/oct.
Filtre coupe-hauts	7 kHz, −6 dB/oct.
Compensateur physiologique (volume à −30 dB)	50 Hz, +9 dB
SORTIE ENREGISTREMENT (REC OUT)	150 mV
ENREGISTREMENT/LECTURE BANDE 1 (TAPE 1 REC/PLAY)	30 mV/82kΩ
Equilibrage des canaux, AUX 250 Hz~6 300 Hz	±1,0 dB
Séparation des canaux, AUX 1 kHz	50 dB
Niveau de sortie des casques et impédance	390 mV/330Ω
Impédance de charge	
PRINCIPALE ou AUXILIAIRE (MAIN or REMOTE)	4Ω~16Ω
PRINCIPALE et AUXILIAIRE (MAIN and REMOTE)	8Ω~16Ω

■ DIVERS

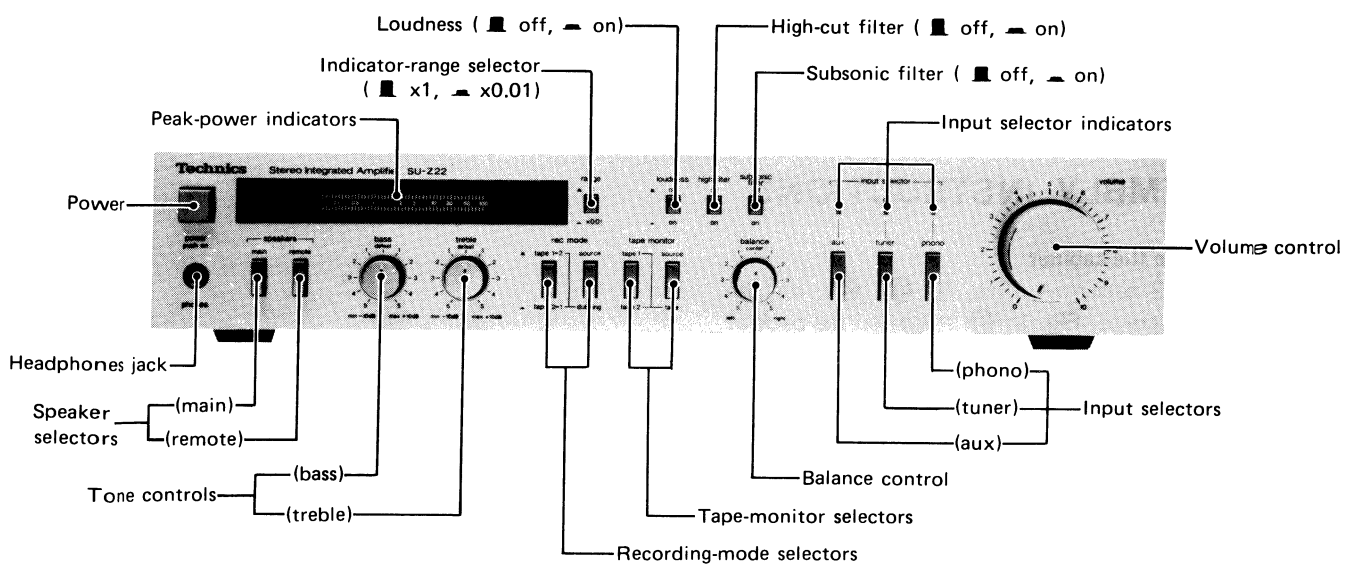
Consommation	310W
Alimentation	CA 50 Hz/60 Hz, 110V/120V/220V/240V
Dimensions (L×H×Pr)	430 × 86 × 288 mm
Poids	5,7 kg

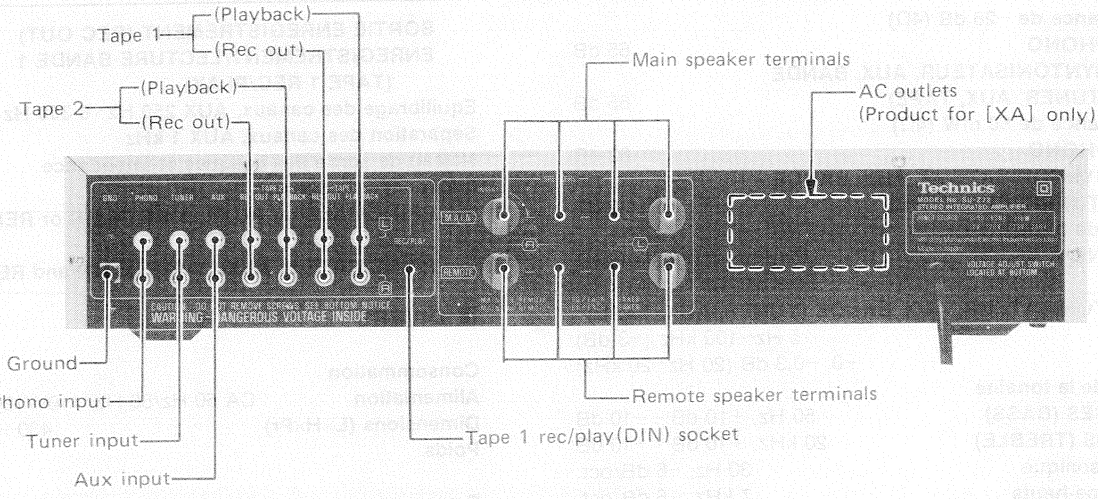
Remarque:
On mesure la distorsion harmonique totale au moyen d'un analyseur de spectre digital (Système H.P. 3045).

■ CONTENTS

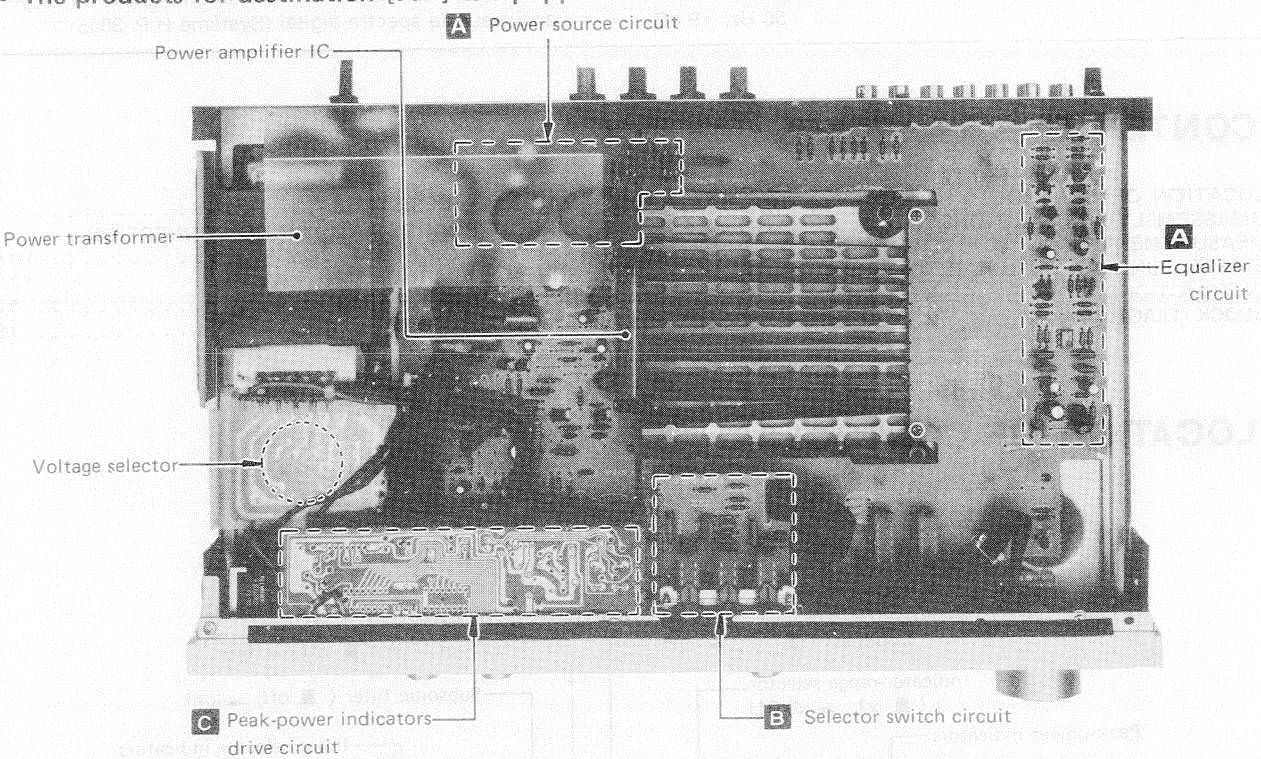
	Page
LOCATION OF CONTROLS	3, 4
DISASSEMBLY INSTRUCTIONS	4 ~ 6
MEASUREMENTS AND ADJUSTMENTS (English)	6
EINSTELLUNGSANWEISUNGEN (Deutsch)	6
INSTRUCTIONS DE REGLAGE (Français)	7
BLOCK DIAGRAM	8
VARIABLE RESISTORS	9
CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM	10 ~ 12
SCHEMATIC DIAGRAM	13 ~ 16
REPLACEMENT PARTS LIST	17, 18
EXPLODED VIEW	19, 20

■ LOCATION OF CONTROLS





- **The products for destination [XA] is equipped with AC outlets.**



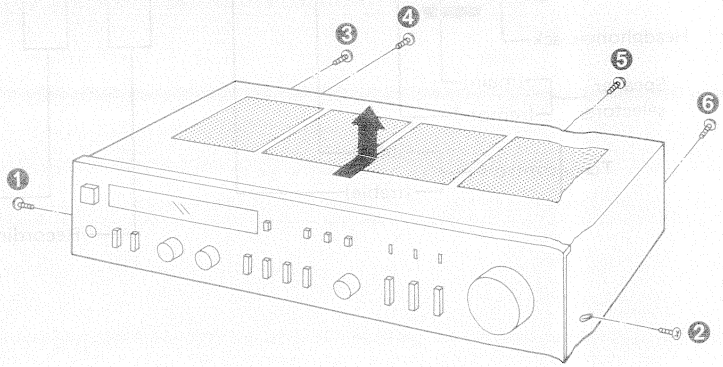
DISASSEMBLY INSTRUCTIONS

- **How to remove the cabinet**

1. Remove the 2 setscrews (Fig. 1: ❶, ❷) on the side and 4 setscrews (Fig. 1: ❸ ~ ❻) on the back of the cabinet.
2. Remove the cabinet.

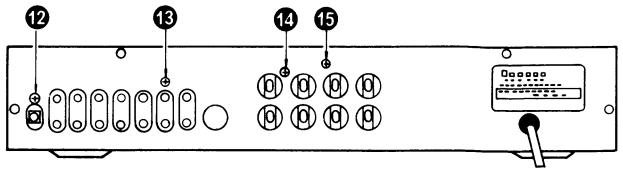
- **How to remove the main printed circuit board**

1. Remove the cabinet.
2. Remove the 5 setscrews (Fig. 2: ❼ ~ ⓫) of the front panel.
3. Open the "lead holder" of the lead connector and pull out the lead wire of the arrow Ⓐ in Fig. 2.
4. Move the front panel in the direction of the arrow Ⓑ in Fig. 2.
5. Remove the 4 setscrews (Fig. 3: ⓬ ~ ⓯) on the back of the set.

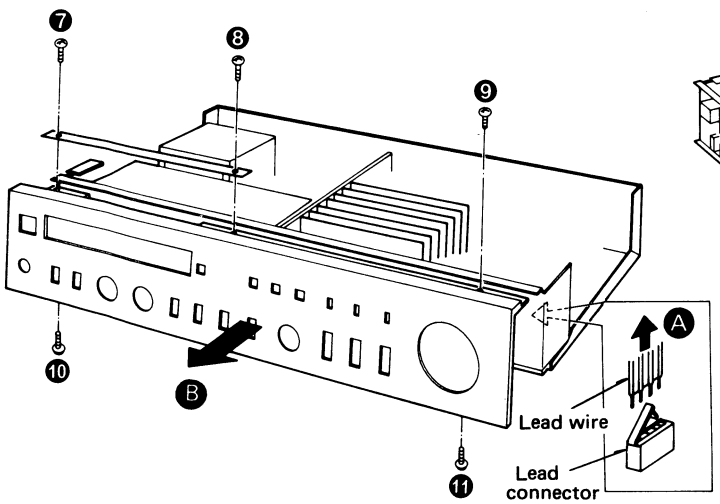


[Fig. 1]

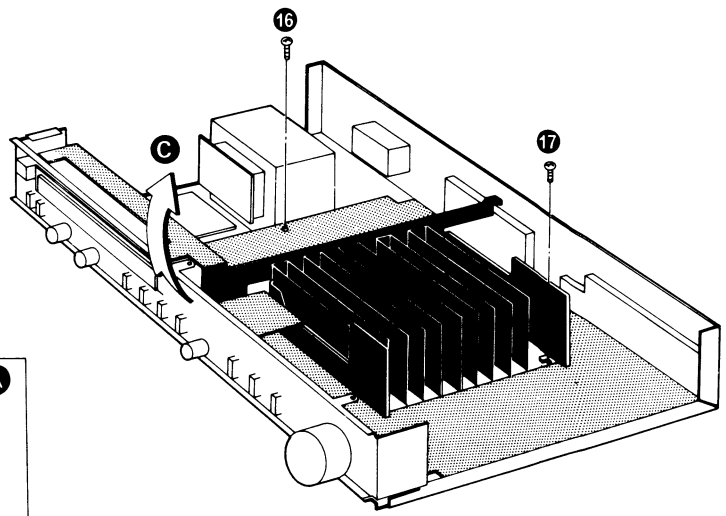
6. Remove the 2 setscrews (Fig. 4: ⑯ , ⑰) witch fastens the printed circuit board in the set.
7. Hold the radiator of the main printed circuit board, and lift it in the direction of the arrow Ⓒ to remove the main printed circuit board from the chassis.



[Fig. 3]



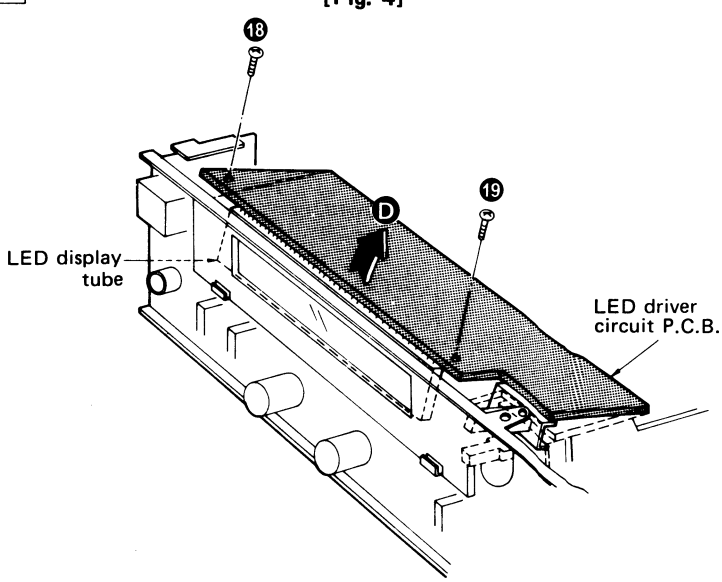
[Fig. 2]



[Fig. 4]

- **How to remove the LED driver printed circuit board**

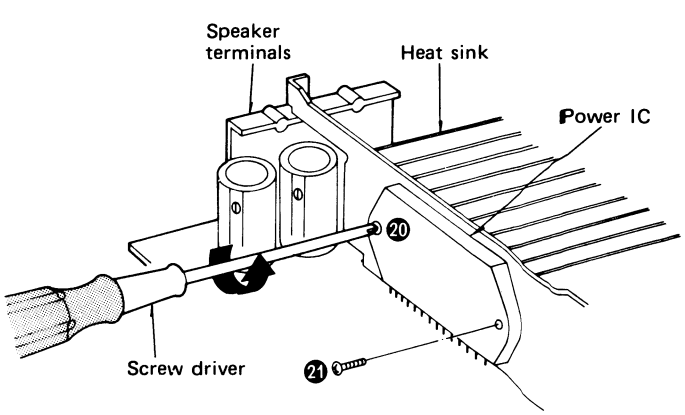
1. Remove the cabinet.
2. Remove the 2 setscrews (Fig. 5: ⑱ , ⑲) to detach the LED driver printed circuit board.
3. Move the LED driver printed circuit board in the direction of the arrow Ⓓ in Fig. 5.



[Fig. 5]

- **How to remove the power IC**

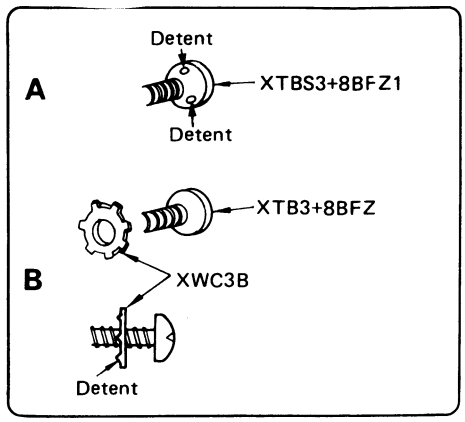
1. Remove the cabinet and chassis. (Refer to "How to remove the cabinet", and "How to remove the main printed circuit board".)
2. Unsolder of power IC.
3. Remove the 2 setscrews (Fig. 6: ⑳ , ㉑) used to secure the power IC on the heat sink, and then pull to the power IC.
4. When mounting the power IC, apply silicone compound (or equivalent heat diffuser) to the rear side of power IC, and then follow the steps 1 ~ 3 reversely.



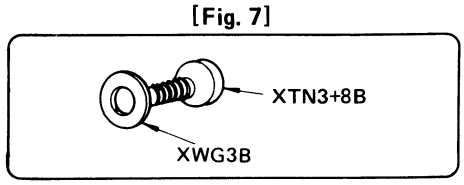
[Fig. 6]

Note 1: Setscrews ⑫ to ⑮ are screws with detents (Part No. : XTBS3+8BFZ1) as shown in Fig. 8-A in order to make the contact of electric circuit perfect.
Take care not to max up these screws with other screws. When substituting, use a 3 x 8mm tapping screw (Part No. : XTB3+8BFZ) and toothed lock washer (Part No. : XWC3B) as shown in Fig. 7-B. The teeth of the lock washer should be positioned on the chassis side.

Note 2: Setscrews ⑱ and ⑲ are plain washer-attached screws (Part No. : XTW3+8H). When substituting, use a 3 x 8mm tapping screw (Part No. : XTN3+8B) and plain washer (Part No. : XWG3B) as shown in Fig. 8.



[Fig. 7]



[Fig. 8]

■ MEASUREMENTS AND ADJUSTMENTS ■■■■■■■■ English ■■■■■■■■

Setting

- Connect a low frequency oscillator to the tuner input terminal, and 8-ohm load resistor and AC electronic voltmeter to the speaker terminal.
- Add 1kHz signal from the low frequency oscillator to the set.
- Set the sound volume to the maximum point.

Adjustment item	Meter range select switch position	Parts to be adjusted	Adjusting procedure
Peak-power indicators	Range switch ... X0.01	VR601 (L ch) VR602 (R ch)	1. Adjust the input level so that the AC voltmeter indicates 2.83V. 2. Adjust the semi-fixed variable resistors VR601 (L ch.) and VR602 (R ch.) so that the 100W segment of FL meter lights up dimly. (Fig. 9)

■ EINSTELLUNGSANWEISUNGEN ■■■■■■■■ Deutsch ■■■■■■■■

Einstellung:

- Einen Niederfrequenzoszillator an die Eingangsklemme des Tuners schließen und parallel zu 8-ohm Belastungswiderstand den elektronischen Wechselstrom-Voltmeter an die Lautsprecherklemme schließen.
- 1 kHz Signal aus dem Niederfrequenzoszillator in das Gerät speisen.
- Lautstärkeregler auf den minimalen Punkt einstellen.

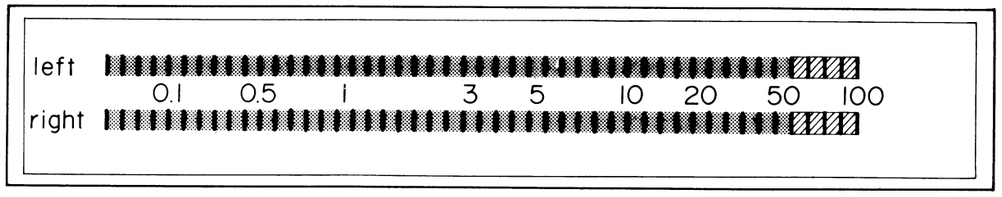
Justierung	Stellung des Meterbereichswählers	Zu justierende Teile	Jusierungsvorgang
Spitzenwertanzeigen	Bereichswähler auf X0.01	VR601 (Linker Kanal) VR602 (Rechter K.)	1. Den Eingangspegel so justieren, daß der Wechselstrom-Voltmeter 2.83V anzeigt. 2. Die halbfest eingestellten Widerstände VR601 (linker Kanal) und VR602 (rechter Kanal) so einstellen, daß das 100W-Segment des Fluoreszenz-Aussteuerungsinstru-mentes schwach aufleuchtet. (Abb. 1)

INSTRUCTIONS DE REGLAGE — Français

Réglage:

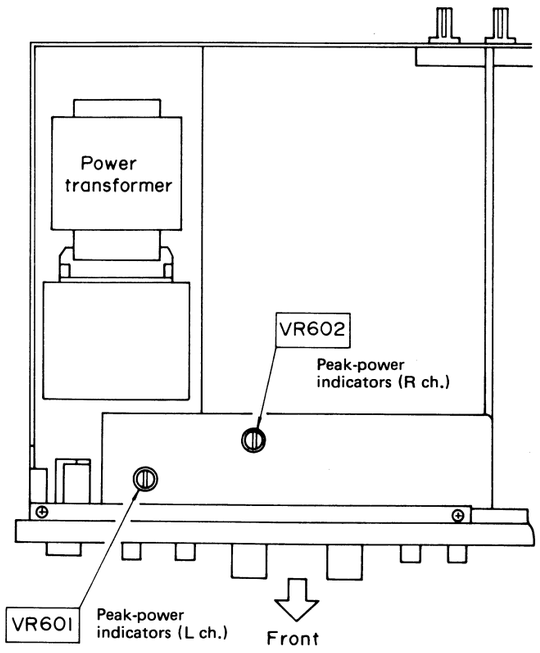
- Brancher un oscillateur à basse fréquence à la borne de sortie du tuner et une résistance de charge de 8 ohms et un voltmétre électronique à la borne de l'enceinte.
- Par l'oscillateur à basse fréquence, appliquer un signal de 1 kHz à l'appareil.
- Régler le volume du son au maximum.

Elément de réglage	Position du commutateur de sélection de la gamme du compteur	Eléments à régler	Procédé de réglage
Indicateurs de puissance de crête fluorescents	Commutateur de gamme X0,01	VR601 (CG) VR602 (CD)	1. Régler le niveau de sortie de telle sorte que la voltmétre CA indique 2,83 V. 2. Régler les résistances variables semi-fixes VR601 (canal de gauche) et VR602 (canal de droite), de façon à ce que le segment de 100W de l'appareil de mesure FL s'éclaire faiblement. (Fig. 7)

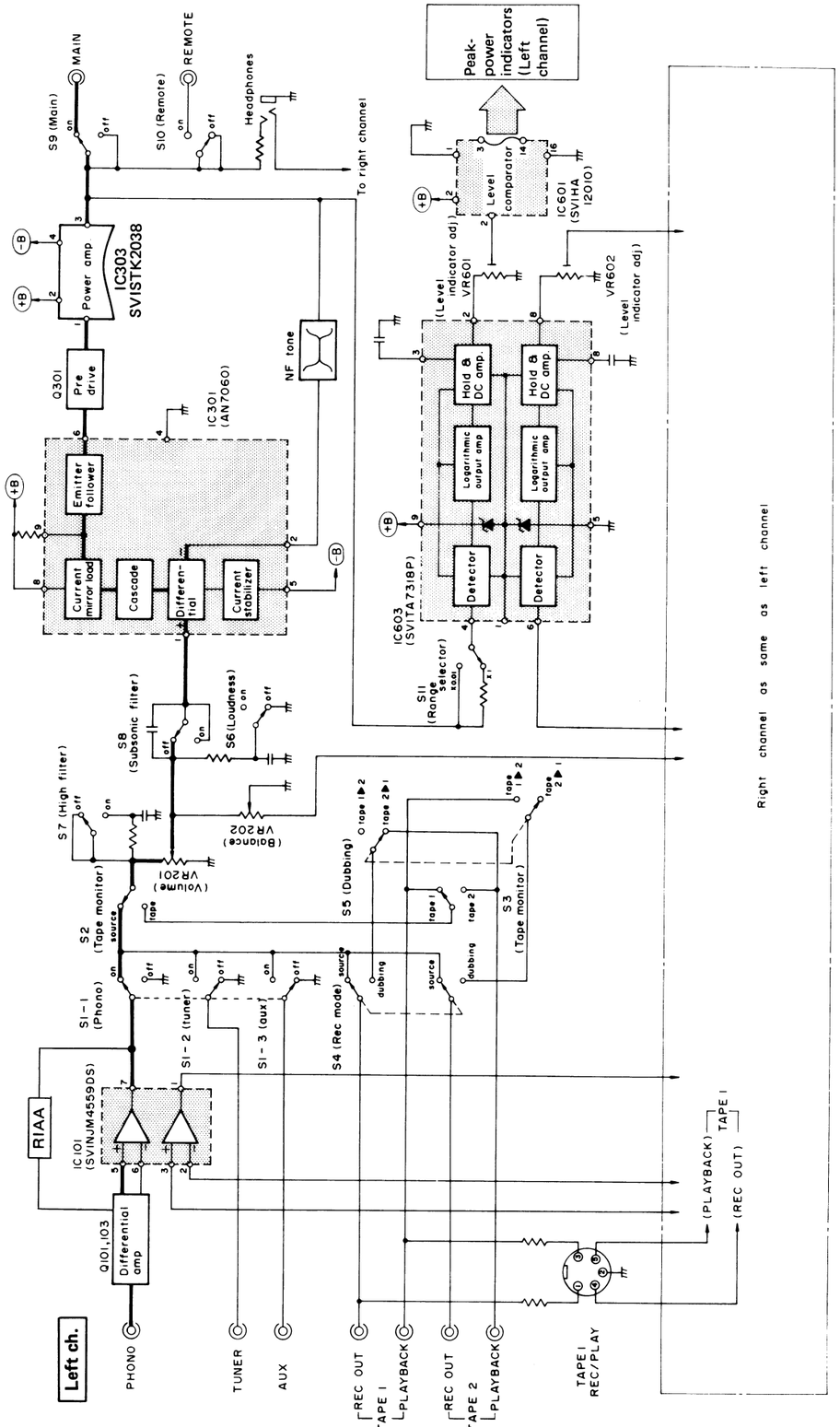


Peak-power indicators
[Fig. 9] Abb. 1

- **Adjustment points**



BLOCK DIAGRAM

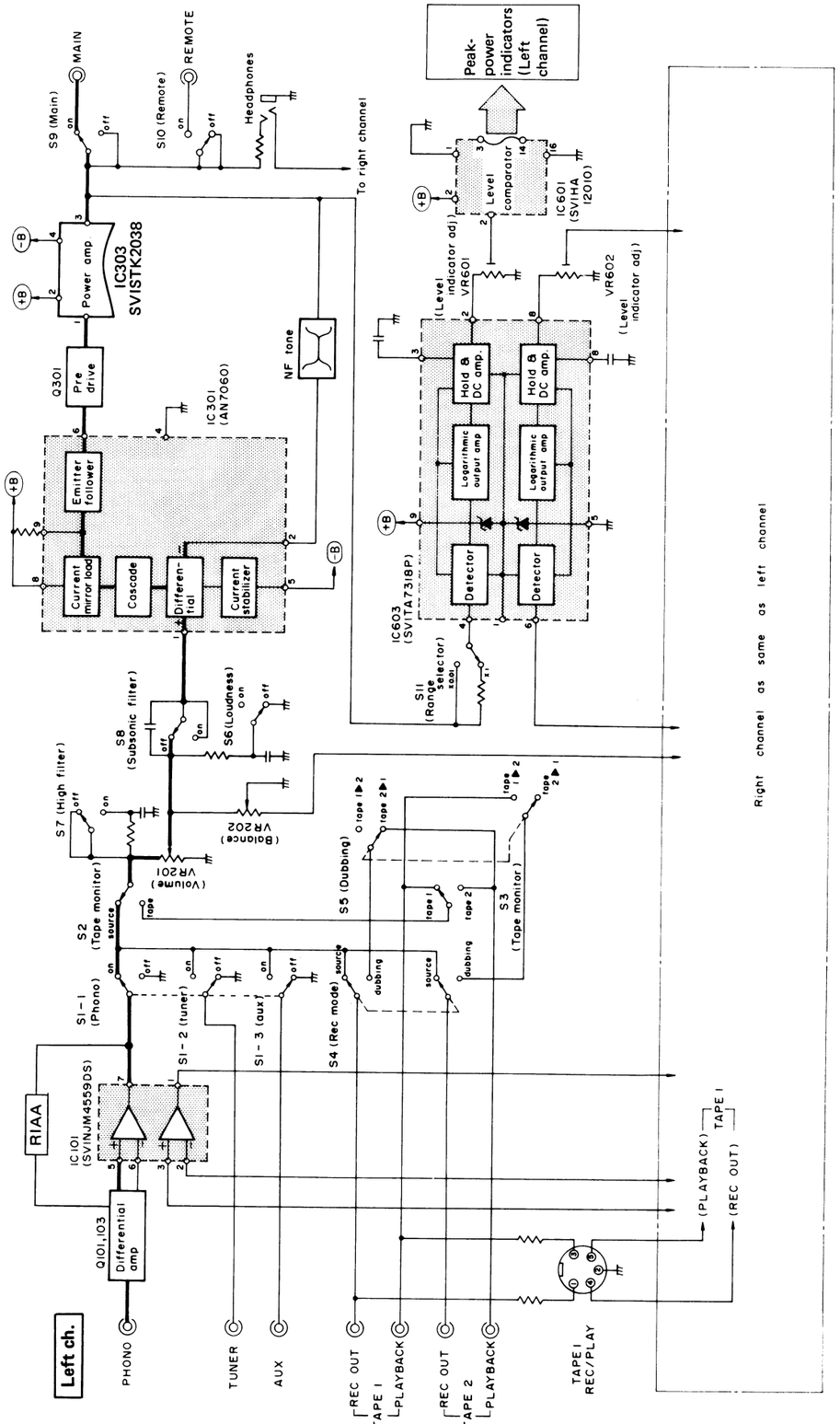


de 8 ohms et un

te que la volt-

ixes VR601
e droite), de
e l'appareil
Fig. 7)

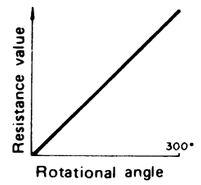
■ BLOCK DIAGRAM



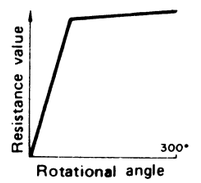
■ VARIABLE RESISTORS

• Alteration of resistance values according to the rotational angles of variable resistors

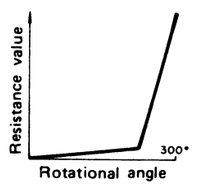
Alteration characteristics as shown below are often used for sets. All are intended to keep the frequency response of the set at optimum levels, and are used according to the types of circuits. For example, characteristic (B) is used for sound volume adjustment; (A) and (C) are for bass and treble sound quality adjustment; (G) is for medium sound quality adjustment; and (BH) is for the adjustment of sound balance between the right and left.



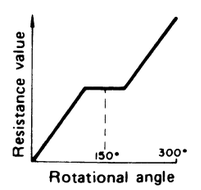
Characteristic (B)



Characteristic (C)

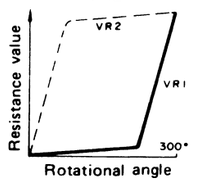


Characteristic (A)

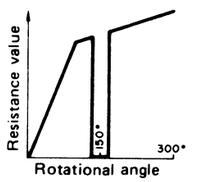


Characteristic (G)

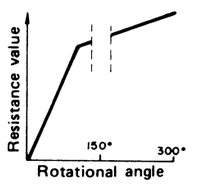
VR1 is inter locked with VR2



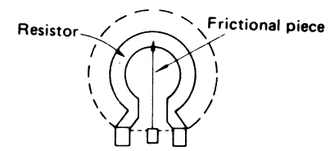
Characteristic (BH)



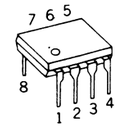
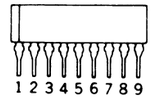
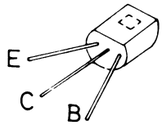
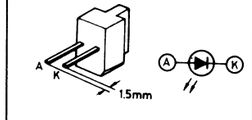
Characteristic (C): short-circuited at center

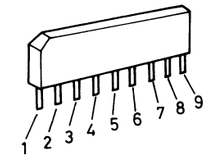
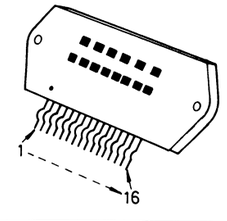
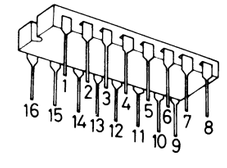


Characteristic (C): opened at center



• Terminal guide of transistors, diodes and IC's

SVINJM4559DS	AN7060F	2SC2320L, 2SA1015, 2SA1123, 2SC1815, 2SC1384	LN820WP
			

SVITA7318P	SVISTK2038	SVIHA12010
		

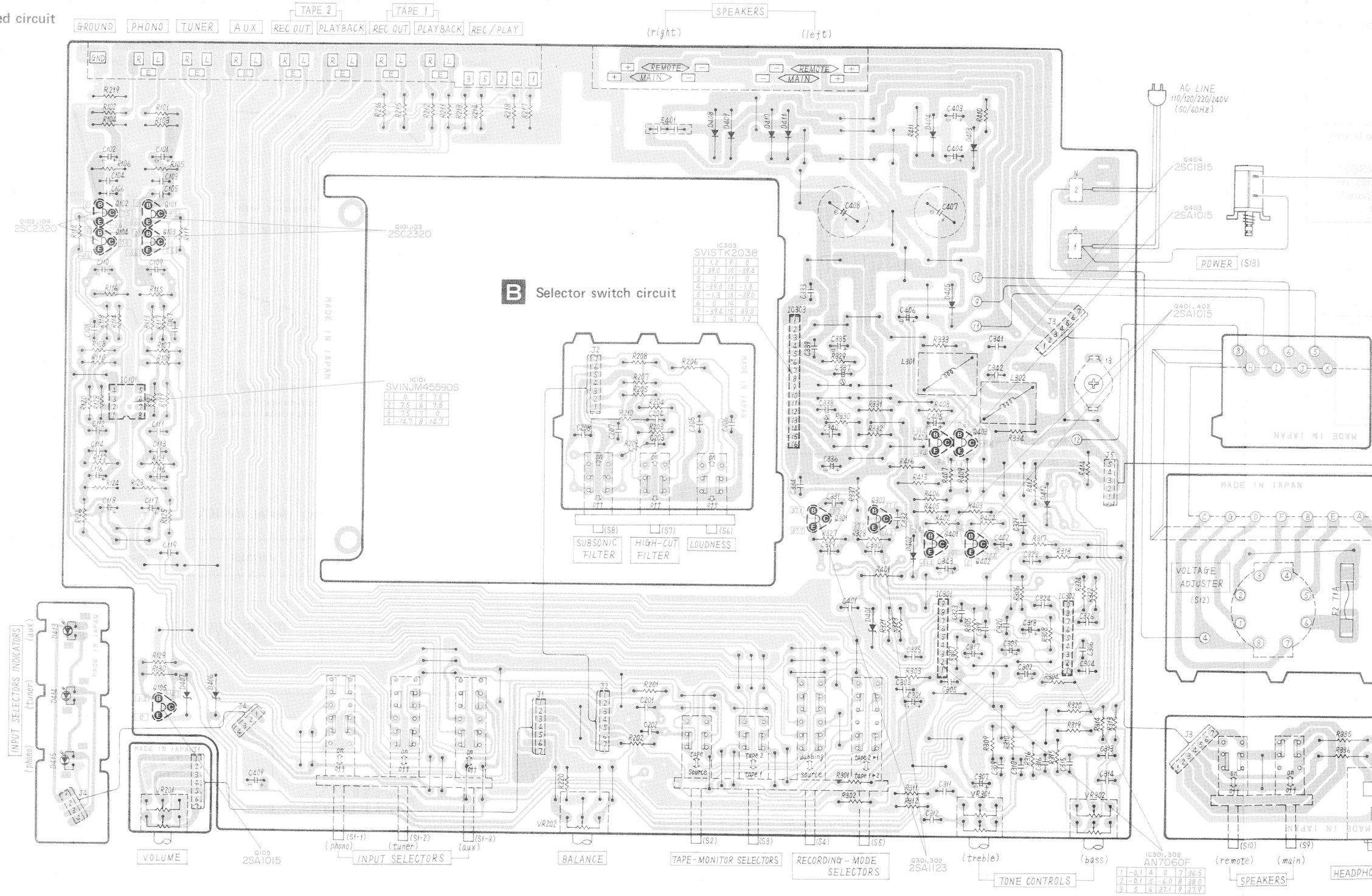
SU-Z22 SU-Z22

CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

Ground (Earth) lines

A Main printed circuit

B Selector switch circuit



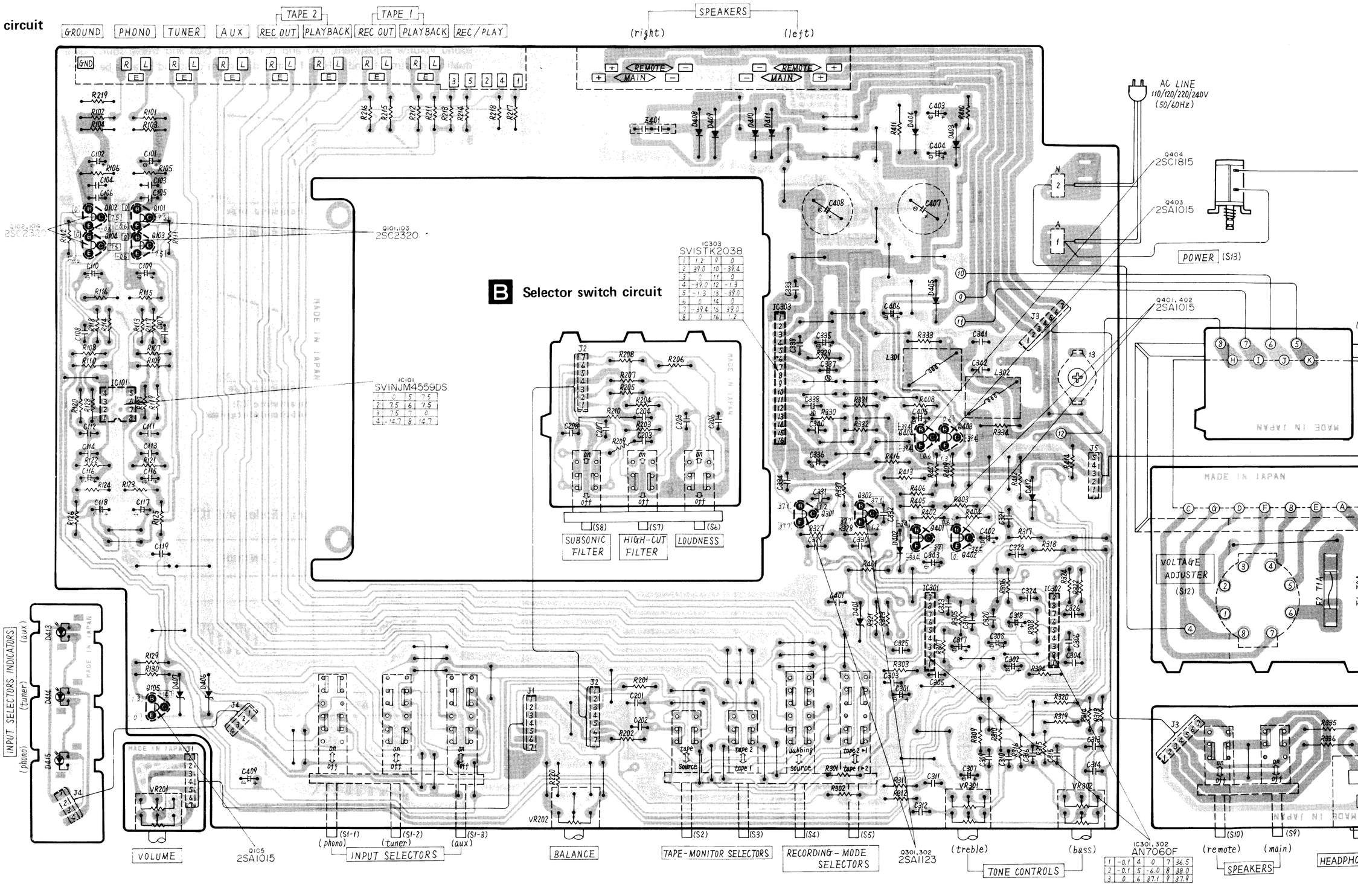
SU-Z22 SU-Z22

■ CIRCUIT BOARDS AND WIRING CONNECTION DIAGRAM

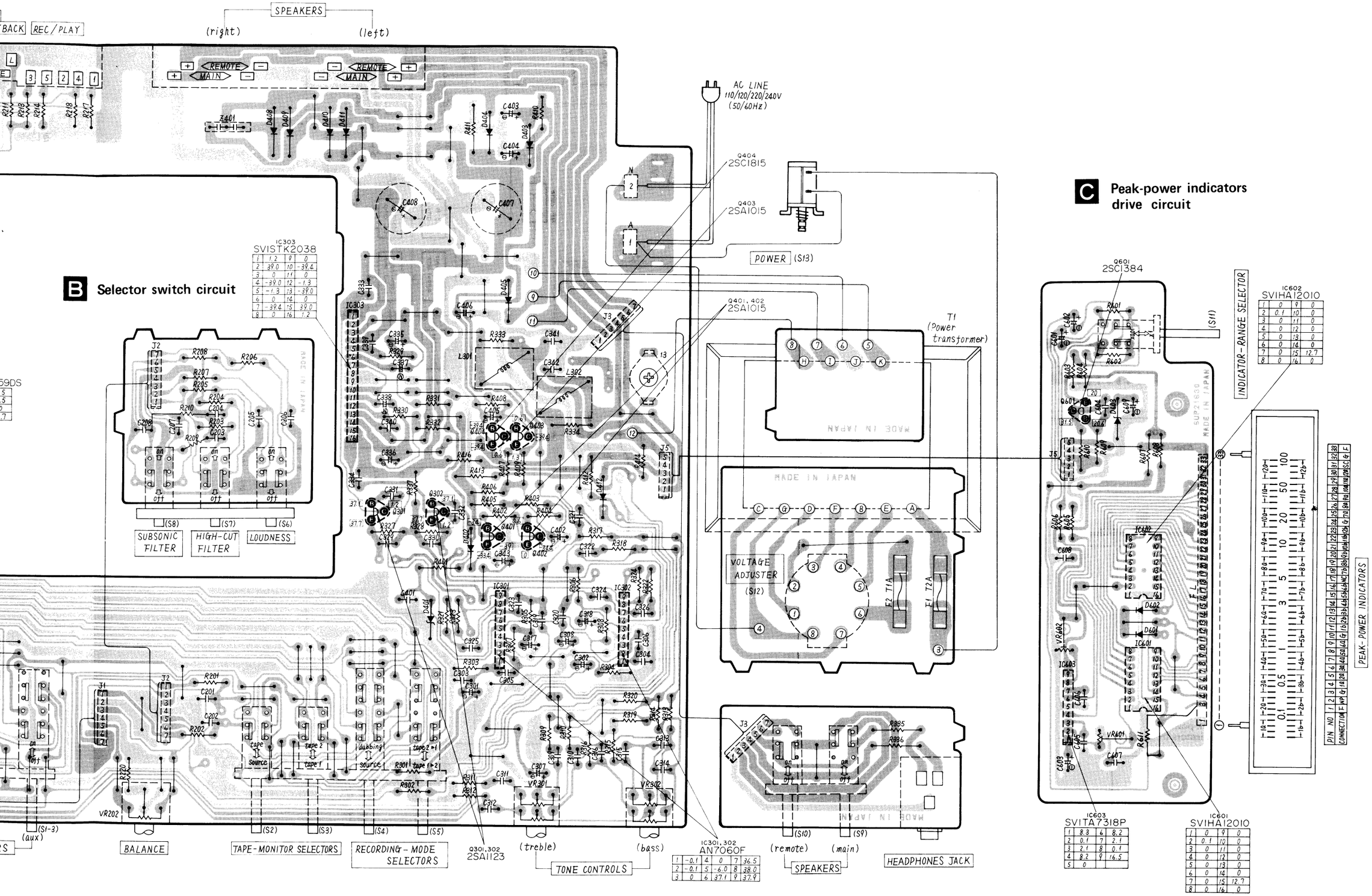
Ground (Earth) lines

A Main printed circuit

B Selector switch circuit

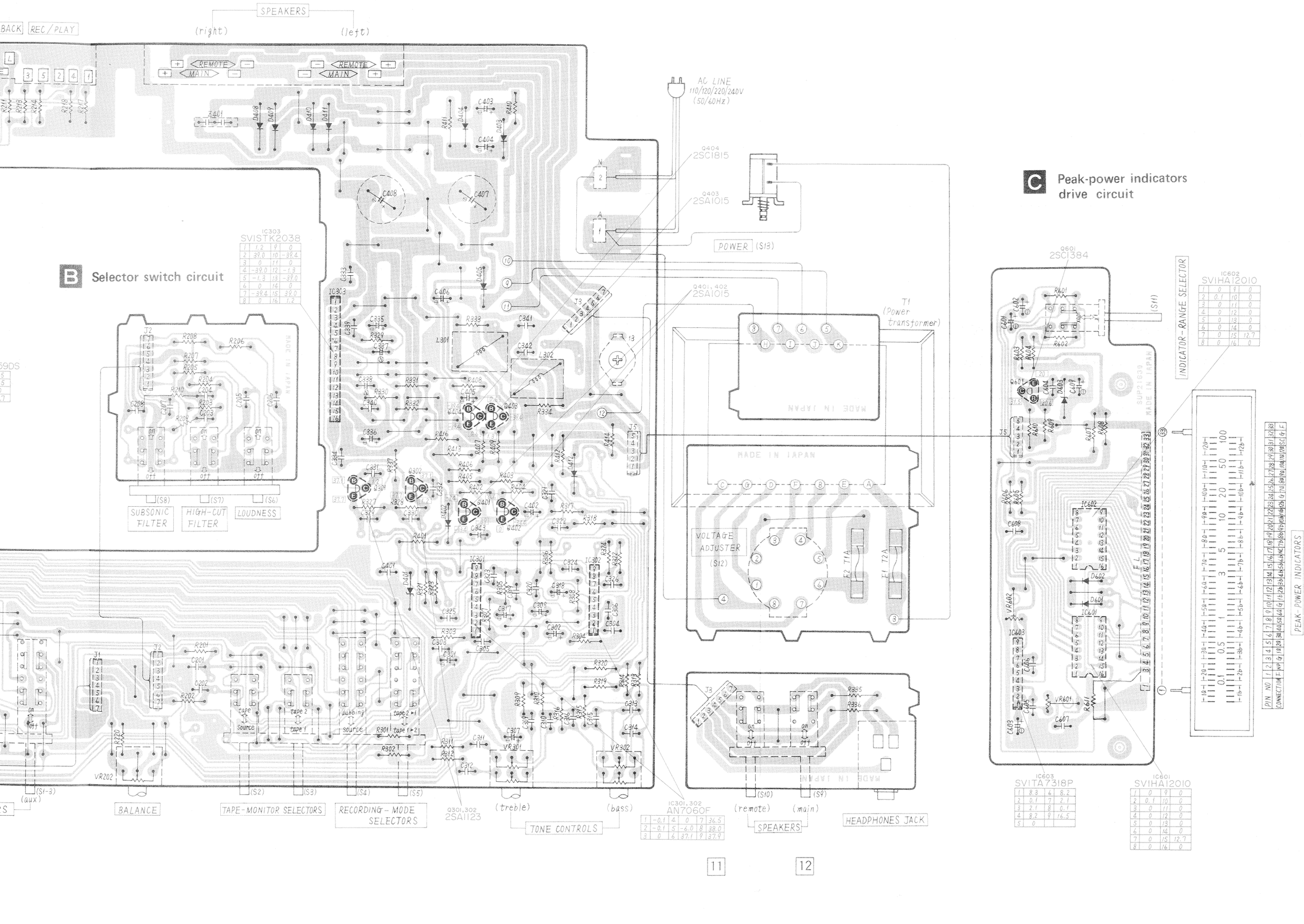


Ground (Earth) lines



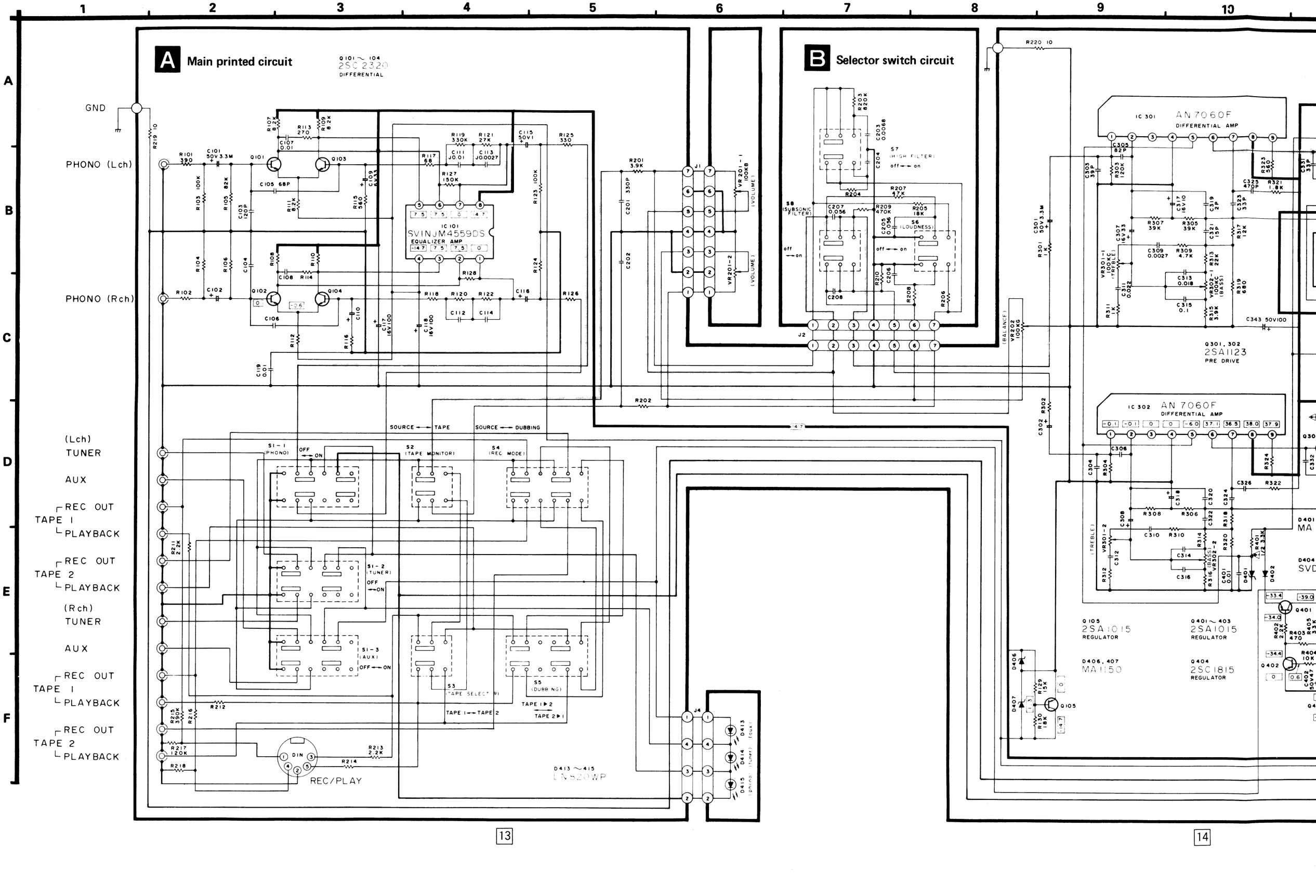
11 12

Ground (Earth) lines



■ SCHEMATIC DIAGRAM

(This schematic diagram may be modified at any time with the development of new technology.)



10 11 12 13 14 15 16 17 18 19

Notes:

1. **S1-1~1-3:** Input selector switch in "**phono**" position.
   phono ⟷ tuner ⟷ aux
2. **S2:** Tape-monitor switch in "**source**" position.
   source ⟷ tape
3. **S3:** Tape selector switch in "**tape 1**" position.
   tape 1 ⟷ tape 2
4. **S4:** Recording-mode switch in "**source**" position.
   source ⟷ dubbing
5. **S5:** Tape dubbing switch in "**tape 1 ▶ 2**" position.
   tape 1 ▶ 2 ⟷ tape 2 ▶ 1
6. **S6:** Loudness switch in "**off**" position.
7. **S7:** High-cut filter switch in "**off**" position.
8. **S8:** Subsonic filter switch in "**off**" position.
9. **S9:** Main speaker switch in "**on**" position.
10. **S10:** Remote speaker swtich in "**off**" position.
11. **S11:** Indicator-range selector switch in "**x1**" position.
    x1 ⟷ x0.01
12. **S12:** Voltage selector swtich in "**240V**" position.
    240V ⟷ 220V ⟷ 110V ⟷ 120V
13. **S13:** Power source switch in "**on**" position.
14. Indicated voltage values are the standard values for the DC electronic circuit tester (high impedance) with the chassis taken as standard. Therefore, there may exist some errors in the voltage values, depending on the internal impedance of the DC circuit tester.
15. Phono signal lines of left channel
16. Positive (+B) voltage lines.
    Negative (−B) voltage.
17. Important safety notice:
    Components identified by ⚠ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

SPEAKERS

Lch MAIN Rch

Lch REMOTE Rch

S9 (MAIN) off ⟷ on

S10 (REMOTE) off ⟷ on

HEADPHONES

IC 301 AN7060F DIFFERENTIAL AMP

IC 302 AN 7060F DIFFERENTIAL AMP

IC 303 SVISTK2038 2-CHANNEL POWER AMP

Q301, 302 2SA1123 PRE DRIVE

Q401 ~ 403 2SA1015 REGULATOR

Q404 2SC1815 REGULATOR

Q601 2SC1384 REGULATOR

D401 MA1062

D402, 403, 412 MA150

D404, 405 SVDSRIK2

D408 ~ 411 SVDS2V20

D601, 602 MA150

D603 MA1200

IC 603 SVITA7318F VOLTAGE AMPLIFIER

IC 601 SVIHA12010 LEVEL COMPARATOR

IC 602 SVIHA12010 LEVEL COMPARATOR

Positive (+) voltage line

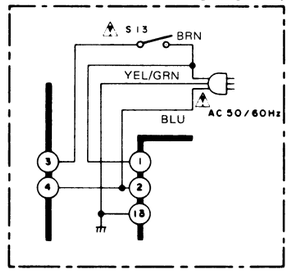
Negative (−B) voltage line

AC 50/60Hz AC 110/120/220/240V

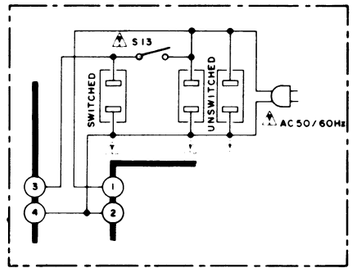
PEAK-POWER INDICATORS

- **Power source circuit of [XL] and [XA] areas.**

Product for Australia [XL] only.



Product for [XA].



14 15 16

C Peak-power indicators drive circuit

■ REPLACEMENT PARTS LIST ·····Electric Parts

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
3. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Ref. No.		Part No.	Part Name & Description
INTEGRATED CIRCUIT			
IC101		SVINJM4559DD	IC, Equalizer Amplifier
IC301, 302		AN7060F	IC, Differential Amplifier
IC303		SVISTK2038	IC, Power Amplifier
IC601, 602		SVIHA12010	IC, Comparator
IC603		SVITA7318P	IC, Level Indicator Drive
TRANSISTORS			
Q101~104		2SC2320L–F	Transistor, Differential
Q105		2SA1015–Y	Transistor, Regulator (use in ranks O or Y)
Q301, 302		2SA1123–R	Transistor, Pre Drive (use in ranks Q, R or S)
Q401~403		2SA1015–Y	Transistor, Regulator (use in ranks O or Y)
Q404		2SC1815–Y	Transistor, Regulator (use in ranks O or Y)
Q601		**2SC1384AR**	Transistor, Regulator
DIODES			
D401		**RVDRD6R2EB**	Diode, 6.2V Zener
D402, 403		**MA162A**	Diode, Switching (Product Part No. MA150)
D404, 405	⚠	**SVDSR1K2**	Diode, Rectifier
D406, 407		MA1150A	Diode, 5V Zener
D408~411	⚠	SVDS2V20	Diode, Rectifier
D412		**MA162A**	Diode, Switching (Product Part No. MA150)
D413~415		LN820WP	Light Emitting Diode, Red
D603		**RVD1N4748**	Diode, 2V Zener
COILS and TRANSFORMERS			
L301, 302		SLQY15G–30	Coil, Choke
T1	⚠	SLT5M139–W	Power Transformer
FLUORESCENT DISPLAY TUBE			
FL		SADBG89Z	Fluorescent Display Tube
VARIABLE RESISTORS			
VR201		EWJGFA066B15	Volume Control 100kΩ (B)
VR202		EWHHMA531G15	Balance Control 100kΩ (G)
VR301		EWJFCO066C15	Treble Control 100kΩ (C)
VR302		EWJFCY066530	Bass Control 100kΩ (C)
VR601, 602		**EVNM4AA00B23**	Indicator Level Adjustment
FUSES			
F1	⚠	XBA2C20TRO	Fuse, T2A 250V
F2	⚠	XBA2C10TRO	Fuse, T1A 250V
COMPONENT COMBINATIONS			
Z401		SXRFS203ZSM	Component Combination 0.01μF x 2
SWITCHES			
S1		SSH387	Switch, Input Selector
S2~5		SSH439	Switch, Tape Selector
S6~8		SSH3013	Switch, Loudness/High filter/Subsonic
S9, 10		SSH277	Switch, Speaker Selector
S11	⚠	ESE37219	Switch, Voltage Adjustment
S12		SSH167	Switch, Range Selector
S13	⚠	ESB90619A	Switch, Power Source
RESISTORS			
R101, 102		**ERD25FJ391**	Carbon, 390Ω, 1/4W, ±5%
R103, 104		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%
R105, 106		**ERD25TJ823**	Carbon, 82kΩ, 1/4W, ±5%
R107, 108		**ERD25FJ822**	Carbon, 8.2kΩ, 1/4W, ±5%
R109, 110		**ERD25FJ822**	Carbon, 8.2kΩ, 1/4W, ±5%
R111, 112		**ERD25FJ822**	Carbon, 8.2kΩ, 1/4W, ±5%
R113, 114		**ERD25FJ271**	Carbon, 270Ω, 1/4W, ±5%
R115, 116		**ERD25FJ561**	Carbon, 560Ω, 1/4W, ±5%
R117, 118		**ERD25FJ680**	Carbon, 68Ω, 1/4W, ±5%
R119, 120		**ERD25TJ334**	Carbon, 330kΩ, 1/4W, ±5%
R121, 122		**ERD25TJ273**	Carbon, 27kΩ, 1/4W, ±5%
R123, 124		**ERD25TJ104**	Carbon, 100kΩ, 1/4W, ±5%
R125, 126		**ERD25FJ331**	Carbon, 330Ω, 1/4W, ±5%
R127, 128		**ERD25TJ154**	Carbon, 150kΩ, 1/4W, ±5%
R129		**ERD25TJ153**	Carbon, 15kΩ, 1/4W, ±5%
R130		**ERD25TJ183**	Carbon, 18kΩ, 1/4W, ±5%
R201, 202		**ERD25FJ392**	Carbon, 3.9kΩ, 1/4W, ±5%
R203, 204		**ERD25TJ824**	Carbon, 820kΩ, 1/4W, ±5%
R205, 206		**ERD25TJ183**	Carbon, 18kΩ, 1/4W, ±5%
R207, 208		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ±5%
R209, 210		**ERD25TJ474**	Carbon, 470kΩ, 1/4W, ±5%
R211, 212		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ±5%
R213, 214		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ±5%
R215, 216		**ERD25TJ394**	Carbon, 390kΩ, 1/4W, ±5%
R217, 218		**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ±5%
R219, 220		**ERD25FJ100**	Carbon, 10Ω, 1/4W, ±5%
R301, 302		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ±5%
R303, 304		**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ±5%
R305, 306		**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ±5%
R307, 308		**ERD25TJ393**	Carbon, 39kΩ, 1/4W, ±5%
R309, 310		**ERD25FJ472**	Carbon, 4.7kΩ, 1/4W, ±5%
R311, 312		**ERD25FJ102**	Carbon, 1kΩ, 1/4W, ±5%
R313, 314		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ±5%
R315, 316		**ERD25FJ392**	Carbon, 3.9kΩ, 1/4W, ±5%
R317, 318		**ERD25TJ123**	Carbon, 12kΩ, 1/4W, ±5%
R319, 320		**ERD25FJ681**	Carbon, 680Ω, 1/4W, ±5%
R321, 322		**ERD25FJ182**	Carbon, 1.8kΩ, 1/4W, ±5%
R323, 324		**ERD25FJ561**	Carbon, 560Ω, 1/4W, ±5%
R327, 328	⚠	**ERD25FJ470**	Carbon, 47Ω, 1/4W, ±5%
R329, 330		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ±5%
R331, 332		**ERD25FJ272**	Carbon, 2.7kΩ, 1/4W, ±5%
R333, 334	⚠	**ERD50FJ100**	Carbon, 10Ω, 1/2W, ±5%
R335, 336		**ERG1ANJ331**	Metal Oxide, 330Ω, 1W, ±5%
R337	⚠	**ERD25FJ470**	Carbon, 47Ω, 1/4W, ±5%
R401	⚠	**ERD50FJ332**	Carbon, 3.3kΩ, 1/2W, ±5%
R402		**ERD25FJ222**	Carbon, 2.2kΩ, 1/4W, ±5%
R403		**ERD25FJ471**	Carbon, 470Ω, 1/4W, ±5%
R404		**ERD25FJ103**	Carbon, 10kΩ, 1/4W, ±5%
R405		**ERD25TJ333**	Carbon, 33kΩ, 1/4W, ±5%
R406		**ERD25TJ224**	Carbon, 220kΩ, 1/4W, ±5%
R407		**ERD25TJ473**	Carbon, 47kΩ, 1/4W, ±5%
R408		**ERD25FJ562**	Carbon, 5.6kΩ, 1/4W, ±5%
R409		**ERD25TJ563**	Carbon, 56kΩ, 1/4W, ±5%
R410		**ERD25TJ124**	Carbon, 120kΩ, 1/4W, ±5%
R411	⚠	ERG1ANJ152	Metal Oxide, 1.5kΩ, 1W, ±5%
R412, 413	⚠	**ERD50FJ152**	Carbon, 1.5kΩ, 1/2W, ±5%
R414	⚠	**ERD25FJ180**	Carbon, 18Ω, 1/4W, ±5%
R416	⚠	**ERD25FJ390**	Carbon, 39Ω, 1/4W, ±5%
R601, 602		**ERD25FJ682**	Carbon, 6.8kΩ, 1/4W, ±5%
R603, 604		**ERD25FJ821**	Carbon, 820Ω, 1/4W, ±5%
R605, 606		**ERD25TJ223**	Carbon, 22kΩ, 1/4W, ±5%
R607	⚠	**ERD50FJ271**	Carbon, 270Ω, 1/2W, ±5%
R608	⚠	**ERD25FJ561**	Carbon, 560Ω, 1/4W, ±5%
R609		**ERD25FJ472**	Carbon, 4.7kΩ, 1/4W, ±5%
R610	⚠	**ERD50FJ151**	Carbon, 150Ω, 1/2W, ±5%
R611		**ERD25FJ471**	Carbon, 470Ω, 1/4W, ±5%
CAPACITORS			
C101, 102		**ECEA50M3R3R**	Electrolytic, 3.3μF, 50V,
C103, 104		ECCD1H121K	Ceramic, 120pF, 50V, ±10%
C105, 106		ECCD1H680K	Ceramic, 68pF, 50V, ±10%
C107, 108		ECKD1H103MD	Ceramic, 0.01μF, 50V, ±20%
C109, 110		**ECEA1CS330**	Electrolytic, 33μF, 16V
C111, 112		ECQM1H103JZ	Polyester, 0.01μF, 50V, ±5%
C113, 114		ECQM1H272JZ	Polyester, 0.0027μF, 50V, ±5%
C115, 116		**ECEA50Z1**	Electrolytic, 1μF, 50V
C117, 118		**ECEA1ES101**	Electrolytic, 100μF, 25V
C119		ECKD1H103ZF	Ceramic, 0.01μF, 50V, ±80%
C201, 202		ECKD1H331KB	Ceramic, 330pF, 50V, ±10%
C203, 204		ECQM1H682KZ	Polyester, 0.0068μF, 50V, ±10%
C205, 206		ECQM1H563KZ	Polyester, 0.056μF, 50V, ±10%
C207, 208		ECQM1H563KZ	Polyester, 0.056μF, 50V, ±10%
C301, 302		**ECEA50M3R3R**	Electrolytic, 3.3μF, 50V, ±10%
C303, 304		ECCD1H390K	Ceramic, 39pF, 50V, ±10%
C305, 306		ECCD1H820K	Ceramic, 82pF, 50V, ±10%
C307, 308		**ECEA1CS330**	Electrolytic, 33μF, 16V
C309, 310		ECQM1H272KZ	Polyester, 0.0027μF, 50V, ±10%
C311, 312		ECQM1H223KZ	Polyester, 0.022μF, 50V, ±10%
C313, 314		ECQM1H183KZ	Polyester, 0.018μF, 50V, ±10%
C315, 316		ECQM1H104KZ	Polyester, 0.1μF, 50V, ±10%
C317, 318		**ECEA1HS100**	Electrolytic, 10μF, 50V
C319, 320		ECCD1H020C	Ceramic, 2pF, 50V ±0.25pF
C321, 322		ECCD1H150K	Ceramic, 15pF, 50V, ±10%
C323, 324		ECCD1H330K	Ceramic, 33pF, 50V, ±10%
C325, 326		ECKD1H471KB	Ceramic, 470pF, 50V, ±10%
C329, 330		ECKD1H471KB	Ceramic, 470pF, 50V, ±10%
C331, 332		ECCD1H330K	Ceramic, 33pF, 50V, ±10%
C333, 334		ECCD1H101K	Ceramic, 100pF, 50V, ±10%
C335, 336		**ECEA1HS470**	Electrolytic, 47μF, 50V
C337, 338	⚠	ECEA1EN3R3S	Non-polar Electrolytic, 3.3μF, 25V
C339, 340		ECCD1H101K	Ceramic, 100pF, 50V, ±10%
C341, 342		ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%
C343		**ECEA1HS101**	Electrolytic, 100μF, 50V,
C401		ECKD1H103ZF	Ceramic, 0.01μF, 50V, ±80%
C402, 403		**ECEA1HS470**	Electrolytic, 47μF, 50V
C404		**ECEA1JS330**	Electrolytic, 33μF, 63V
C405		**ECEA50Z3R3**	Electrolytic, 3.3μF, 50V
C406		**ECEA2AS100**	Electrolytic, 10μF, 100V
C407, 408		ECETS45V682U	Electrolytic, 6800μF, 45V
C409		**ECEA1CS331**	Electrolytic, 330μF, 16V
C601, 602		**ECEA50ZR47**	Electrolytic, 0.47μF, 50V
C603		**ECEA50ZR47**	Electrolytic, 0.47μF, 50V
C604		ECKD1H103ZF	Ceramic, 0.01μF, 50V, ±80%
C605, 606		ECKD1H332KB	Ceramic, 0.0033μF, 50V, ±10%
C607, 608		ECQM1H473KZ	Polyester, 0.047μF, 50V, ±10%
C609		**ECEA1VS330**	Electrolytic, 33μF, 35V

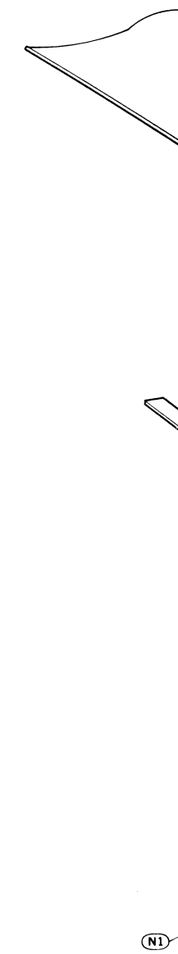
■ REPLACEMENT PARTS LIST ·····Cabinet and Chassis Parts

Notes: 1. Part numbers are indicated on most mechanical parts. Please use this part number for parts orders.
2. Important safety notice:
Components identified by ⚠ mark have special characteristics important for safety.
When replacing any of these components, use only manufacturer's specified parts.
3. ⓚ -marked parts are used for black only, while ○-marked parts are for silver type only.
4. Parts other than ⓚ - and ○-marked are used for both black and silver types.
5. Bracketed indications in Ref. No. columns specify the area. Parts without these indications can be used for all areas.

Black type model No.: SU-Z22(K)

Ref. No.		Part No.	Part Name & Description
CABINET & CHASSIS PARTS			
1	○	SGWUZ22E	Panel, Front Ass'y
1	ⓚ	SGWUZ22KE	Panel, Front Ass'y (Black)
2		SHP9341	Ornament, Volume Control
3		SHP9327	Ornament, Balance Control
4		SHP9343	Ornament, Bass, Treble Control
5		SBC307–1	Button, Power
6		SBC339	Button, Speaker/Rec mode/Tape monitor Selector
7		SBC367	Button, Range/Loudness/High Filter/ Subsonic
8		SBN1019	Knob, Bass/Treble/Balance
9		SBC365	Button, Input Selector
10		SBN1021	Knob, Volume Control
11		SMP303	Holder, LED (D413~415)
12		XCJ6P21B–A1	Jack, Headphones
13		SHG619	Cushion, Display Window
14		SHS1009	Sheet, Front Panel
15		SUW1807	Spacer, Front Frame
16		SGU213	Transparent Cover
17	○	SGX7033	Ornament, Display Tube
17	ⓚ	SGX7033–1	Ornament, Display Tube (Black)
18		SHG1509	Cushion, Rubber
19		SDU67	Filter, Display Window
20		SJF4813–1	Terminal, Speakers
21		SJF3045–9N	Terminal, Input
22		SHS2437	Fiber, Right Side Chassis
23		SKL245	Foot
24 [E]		SGP2650B	Rear Panel
24 [EK,EG,EH, EF,EB]		SGP2650D	Rear Panel
24 [XA]		SGP2650–2B	Rear Panel
24 [XL]		SGP2650–3B	Rear Panel
25	○	SKC750S1	Cabient
25	ⓚ	SKC750B1	Cabient (Black)
26	⚠	**SJA88**	AC Cord
26 [EK]	⚠	**QFC1205M**	AC Cord
26 [XA]	⚠	SJA111	AC Cord
26 [XL]	⚠	**QFC1207MA**	AC Cord
27		SHR127	Bushing, AC Cord
27 [EK]		SHR129	Bushing, AC Cord
27 [XL]		SHR131	Bushing, AC Cord
28 [XA] only	⚠	SJS601–1	Socket, AC Outlet
29		SJS5707	Connector 7 Pin
29		SJS5519	Connector 5 Pin
29		SJS5711	Connector 7 Pin
SCREWS, WASHERS and NUTS			
N1		**XTB3+8BFN**	Screw, Tapping ⊕ 3x8
N2	○	**XTB4+8BFN**	Screw, Tapping ⊕ 4x8
N2	ⓚ	**XTB4+8BFZ**	Screw, Tapping ⊕ 4x8
N3		**XTB4+10BFZ**	Screw, Tapping ⊕ 4x10
N4		SNE4021	Nut
N5		**XNS12**	Nut
N6		**XTB3+8BFZ**	Screw, Tapping ⊕ 3x8
N7		**XTV3+8BFN**	Screw, Tapping ⊕ 3x8
N8		XTNS3+C6-1S	Screw, Tapping ⊕ 3x6
N9		**XWC3B**	Washer
PACKING PARTS			
P1	○	SPG2969	Carton Box
P1	ⓚ	SPG2979	Carton Box (Black)
P1 [EG]		SPG2977	Carton Box
P1 [EF]		SPG2975	Carton Box
P1 [XA]		SPG2971	Carton Box
P1 [XL]		SPG2973	Carton Box
P2		SPS3073	Pad, Left Side
P2 [XL]		SPS3073–1	Pad, Left Side
P3		SPS3075	Pad, Right Side
P3 [XL]		SPS3075–1	Pad, Right Side
P4		SPP649	Polyethylene Bag
ACCESSORIES			
A1 [XA]	⚠	SJP5213–1	Plug Adapter, AC Power
A2 [XA]	⚠	SJP5215	Plug Adapter, AC Power
A3		SQF20339	Instructions Book, Printed Matter
A3 [XL]		SQF20341	Instructions Book, Printed Matter
A3 [EK,XA]		SQF20343	Instructions Book, Printed Matter

■ EXPLOD

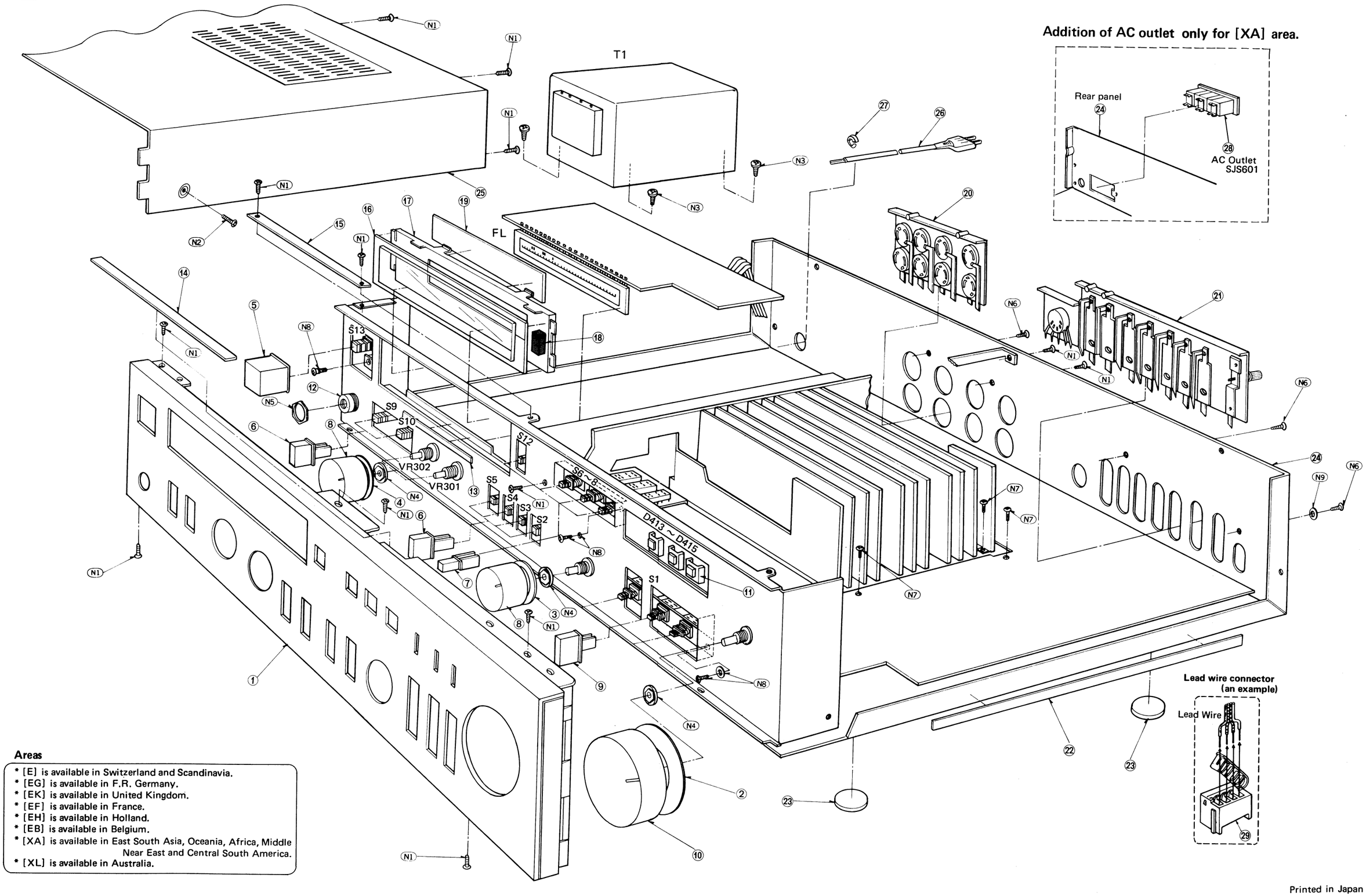


Areas

* [E] is available in S
* [EG] is available in
* [EK] is available in
* [EF] is available in
* [EH] is available in
* [EB] is available in
* [XA] is available in

* [XL] is available in

■ EXPLODED VIEW



Addition of AC outlet only for [XA] area.

Lead wire connector (an example)

Areas

* [E] is available in Switzerland and Scandinavia.
* [EG] is available in F.R. Germany.
* [EK] is available in United Kingdom.
* [EF] is available in France.
* [EH] is available in Holland.
* [EB] is available in Belgium.
* [XA] is available in East South Asia, Oceania, Africa, Middle Near East and Central South America.
* [XL] is available in Australia.

Printed in Japan
81038500 ⊗ YK/`